



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 10

1200 Sixth Avenue, Suite 900  
Seattle, WA 98101-3140

OFFICE OF  
ECOSYSTEMS, TRIBAL AND  
PUBLIC AFFAIRS

March 30, 2015

Charles Mark  
Forest Supervisor  
Salmon-Challis National Forest  
1206 South Challis Street  
Salmon, Idaho 83467

Dear Mr. Mark:

In accordance with our responsibilities under Section 309 of the Clean Air Act, the National Environmental Policy Act, and the Council on Environmental Quality regulations for implementing NEPA, the U.S. Environmental Protection Agency has reviewed the Draft Environmental Impact Statement (DEIS) for the proposed **Invasive Plant Treatment Project** (EPA Region 10 Project number: 11-026-AFS) on Salmon-Challis National Forest (SCNF) in Butte, Custer, and Lemhi Counties, Idaho.

The DEIS analyzes potential environmental impacts associated with activities to prevent, detect, control and manage invasive plants on the SCNF. The treatment area would be more than 31 million acres of public land, of which over 49,000 acres are now infested with invasive plants. New infestations are also occurring at an annual rate of 10-24%. Treatments would include biological (2,000 acres), manual/mechanical (2,000 acres), and chemical (16,000 acres) methods. The proposed program would be implemented over the next 10-15 years or until conditions substantially change.

Analysis of impacts from the project considered five action alternatives, 1-5, including a No Action (Alternative 1). Differences between the alternatives relate to treatment acreage, methods, and cost per acre treated. Under the Proposed Action and Preferred Alternative (Alternative 3), the Forest Service (FS) would implement an adaptive integrated weed management strategy to eradicate or control existing or newly discovered invasive plants on about 20,000 acres each year over the next ten to fifteen years. Treatment methods would include biological, manual/mechanical, and herbicide applications (ground, aerial, and aquatic). Those options would be implemented singly or in combination with each other to manage the invasive plants. There would also be rehabilitation and restoration of sites and continued monitoring to ensure treatments are achieving desired outcomes. Alternatives 4 and 5 would be similar to Alternative 3, but would exclude use of aerial and aquatic herbicide applications, respectively. Under Alternative 2, current management of invasive plants would continue without change. The Proposed Action, therefore, expands the current invasive plant management program with the addition of three new herbicides and inclusion of aerial herbicide application and aquatic invasive plant treatment strategies.

The EPA supports treatment of invasive plant infestations to maintain or improve the diversity, function and sustainability of desired native plant communities and other natural resources that can be adversely impacted by invasive plant species. We note with appreciation that the DEIS addresses many of the

issues we raised during the project scoping period in August 2011, including analysis of cumulative and climate change effects. The DEIS includes a good description of resources within the project area, anticipated environmental impacts, and measures to offset adverse impacts that could result from the proposed project activities. Also, we are pleased with the inclusion of monitoring as an important component of the project because it ensures progress towards meeting the goals of the proposed program can be measured and reported, and compliance with regulatory requirements, including environmental standards, are adhered to throughout the program period. We support aspects of the Preferred Alternative, particularly the ability of this alternative to restore sites to natural functions and native species.

We have some concerns regarding the project as currently proposed because of potential impacts to air and water quality, vegetation and wildlife, and other resources as discussed in our attached detailed comments. We are concerned that the DEIS does not include air quality data analysis for the project. The proposed action could impact air quality due to herbicide use, especially aerial application. Therefore, we are unable to determine whether proposed treatments would result in emissions that would exceed Prevention of Significant Deterioration thresholds or National Ambient Air Quality Standards. The final EIS should include air quality data; discuss impacts to air quality from this project and other sources of emissions; and implications for nearby sensitive receptors e.g., the Frank Church River of No Return Wilderness area.

Regarding water quality, we recommend that the Forest Service continue to work with the Idaho Department of Environmental Quality (IDEQ) and tribes affected by the project to assure that the state and tribal water and air quality standards will be met throughout the project period. The DEIS indicates there are water quality impaired rivers and streams within the analysis area. Total Maximum Daily Loads (TMDLs) have been completed for some, but not all, of these water bodies. The final EIS should indicate how the Forest Service will work with IDEQ to ensure compliance with Water Quality Restoration Plans that will function as the Forest Service's share of implementing existing TMDLs in the project area and vicinity. We note with appreciation that various rehabilitation and restoration activities proposed, in addition to similar actions taken by the Cooperative Weed Management Area participants, will contribute positively to water quality restoration within water bodies on SCNF.

Because there are fish-bearing rivers and streams (p. 3.156) and species that are listed as endangered or threatened (e.g., Sockeye salmon), a candidate for listing (e.g., Greater sage-grouse), and sensitive (e.g., Westslope Cutthroat Trout) the Forest Service should coordinate with the US Fish and Wildlife Service and National Marine Fisheries Service, as well as Idaho Department of Fish and Game as appropriate to reduce risks to species and protect biota and habitat during implementation of this project. The final EIS should include any additional relevant information developed as a result of coordination with these agencies, particularly outcomes of consultations with the agencies and recommended measures to protect fisheries and other species.

Based on our review and concerns about water and air quality and unclear or missing information, we have assigned a rating of EC-2 (Environmental Concerns – Insufficient Information) to the DEIS. For your reference, a copy of the rating system used in conducting our review is enclosed.

We appreciate the opportunity to review this DSEIS. If you have question about our comments, please contact me at (206) 553-1601 or by electronic mail at [reichgott.christine@epa.gov](mailto:reichgott.christine@epa.gov), or you may contact Theo Mbabaliye of my staff at (206) 553-6322 or electronic mail at [mbabaliye.theogene@epa.gov](mailto:mbabaliye.theogene@epa.gov).

Sincerely,



Christine B. Reichgott, Manager  
Environmental Review and Sediment Management Unit

Enclosure:

1. EPA Rating System for Draft Environmental Impact Statements

**EPA Detailed Comments on the DEIS for  
Invasive Plant Treatment Project  
Salmon-Challis National Forest**

**Impacts to air quality**

For better protection of public health from air pollution exposure, the EPA has set National Ambient Air Quality Standards (NAAQS) for six principal pollutants or criteria pollutants<sup>1</sup> to use to determine if emissions from a project would exceed daily and annual standards. Any project that would generate emissions exceeding the standards would have to include measures to demonstrate that, if implemented, the project would comply with both state and federal air quality regulations. Please also note that NAAQS are enforced by states, which might have additional or more stringent standards. Because the project area is adjacent to the Frank Church River of No Return Wilderness area, then, air quality analysis for this project should consider potential air pollution impacts from this and other projects to all sensitive receptors that may require protection from air quality deterioration and determine measures to take to reduce the impacts.

Because of the proposed project, there would be aerial application of herbicides on 8,000 acres, which could result in herbicide volatilization, drift, and potential movement with air currents as spray drifts away from the treatment site affecting air quality. In addition to impacts due to the proposed project, air quality may also be impacted due to cumulative impacts from surrounding activities such as road construction and use (regular traffic on dirt roads), site operations, emissions from vehicles using local roads, and cumulative impacts from surrounding activities, such as agriculture, fire, and use of woodstoves.

**Recommendations:**

- *The final EIS should consider all sources of emissions and determine the contribution of each source (including this project) to air quality within the analysis area and vicinity - negative or positive. This analysis should address and disclose the project's potential effects on all criteria pollutants under the NAAQS, including ozone; visibility impairment; and air quality related values in the protection of any affected Class I Areas, any significant concentrations of hazardous air pollutants, and protection of public health.*
- *Because the project area and vicinity may include sensitive populations such as the elderly and children, it will be important to monitor air quality and take corrective action to prevent further deterioration of air quality conditions in the area, particularly during proposed activities. Monitoring strategies should tailor to local conditions because localized air quality impacts can be substantial when area-wide and/or long term monitoring may show compliance with air quality regulatory requirements.*
- *The FS should coordinate with IDEQ and tribes affected by the project to assure emissions would be reduced in general and those due to the proposed action in particular.*

**Impacts to water resources**

The DEIS identifies water resources in the project area and provides information about impaired waters and the status of applicable Total Maximum Daily Loads (TMDLs) (p. 3.90). We note that the project area includes nearly 4,100 miles of perennial streams and almost 6,000 miles of intermittent or

---

<sup>1</sup> <http://www.epa.gov/air/criteria.html>

ephemeral streams (p. 3.88); and that there are about 3,187 acres of small (less than 200 acres) and scattered lakes. Water quality within 61 rivers and creeks is impaired due to exceedances of the State of Idaho water quality standards for a variety of parameters, including sediment, temperature, bioassessment, fecal coliform, e-coli, and metals.

The DEIS further indicates that the largest concentrations of invasive plants occurs just within 300 ft. of some creeks including Trail and Panther, Canyon, Sawmill, and Pass. While the draft EIS identifies impaired water bodies within the project area and parameters for which they were listed, it does not include data about water quality criteria, specifically what the numeric water quality standard exceedances are for listed waters. Without that information, it is difficult to know whether the proposed weed treatments will exacerbate conditions in impaired streams or not. For specific actions that can be taken to address water quality impairments and restoration on national forest system lands, please also consult the Memorandum Of Agreement (September 28, 2007) between EPA and FS<sup>2</sup>. Please also note that the anti-degradation provisions of the Clean Water Act prohibit degrading water quality in water bodies that currently meet water quality standards.

As there are currently no aquatic invasive plants on the SCNF, we would expect that any new infestation will be dealt with using prevention and early detection/rapid response management actions so that the need for herbicide application directly to water bodies, especially to those that are impaired, does not arise. Source Water Protection Areas also exist within the project area (106,053 acres) and the DEIS shows that about 3,627 acres of those source water areas are currently infested with invasive plants (p. 3.92) which require treatment. In addition, the DEIS indicates that the project area includes numerous riparian areas covering a total of nearly 400,000 acres, and varying from narrow bands along headwater streams to expansive valley-wide floodplains in larger, low gradient channels (p. 3.80). It further states that all riparian acreage is within the Riparian Habitat Conservation Areas (RHCA), which are subject to the requirements of the Pacific Anadromous Fish/Inland Native Fish management strategies that limit ground-disturbing activities within RHCA. For improved protection of aquatic resources in RHCAs from the proposed project, we expect FS will adhere to prescribed buffers i.e., 300 ft. on all fish-bearing streams and 150 ft. on streams without fish.

Soils on the SCNF have high rock fragment content, which makes them coarse in texture, resulting in high infiltration rates (p. 3.93). Because of this, herbicides that are highly soluble in water, such as picloram, have the potential to leach into such soils and contaminate surface and groundwater, potentially causing exceedances of water quality and/or drinking water standards. This is especially concerning because of use of adjuvants which have not undergone complete risk assessment (p. 3.117). Further, the DEIS indicates that toxicities of herbicides when combined with adjuvants are not generally known and that their environmental fate remains largely undetermined. In addition, no water quality standards exist for three additional herbicides (aminopyralid, imazamox, and imazapyr) considered for use in the proposed action (p. 3.136). After application of some of these new herbicides on sandy soils, their concentrations are anticipated to be high due to their high leaching and persistence properties (p. 3.136). For example, aminopyralid has the highest mobility, with modeling suggesting that leaching can occur to 60 inches or greater in all soil types in average rainfall/cool climates and would more likely reach groundwater than all other herbicides considered (p. 3.138).

---

<sup>2</sup> [http://water.epa.gov/lawsregs/lawguidance/cwa/tmdl/upload/2007\\_09\\_28\\_15\\_16\\_08.pdf](http://water.epa.gov/lawsregs/lawguidance/cwa/tmdl/upload/2007_09_28_15_16_08.pdf)

While the use of the WEPP model to characterize soil erosion risks may be appropriate for this project, the model provides general guidance. The model requires data representative of the project area for useful estimation of soil erosion and compaction risks because effects on soils tend to occur in discrete areas. As the DEIS indicates, detailed soils data are limited on the SCNF (p. 3.92) and invasive plants are most prevalent in some land and vegetation cover types. For this reason, we support the FS's Aerial Herbicide Application Coordination and Safety Implementation Plan, which includes site specific analysis of the factors influencing the delivery of herbicides to surface water via overland flow in order to determine appropriate treatments which would minimize adverse effects (p. 3.133).

The DEIS notes many of the infestations in the SCNF are associated with roads, trails, paths, and other areas where the soil has been disturbed and/or compacted. Road prisms, road cuts, and road fills are also runoff-dominated features, which enhance runoff by concentrating flows on compacted road surfaces and in ditches, but also by intercepting groundwater flow from cut slopes (p. 3.180). As there are such settings on SCNF and 90% of noxious weed infestation throughout the SCNF occurs within only 0.25 miles of a road or trail (p. 3.11), the potential for discharge of sediment and herbicides to the waterbodies via surface runoff exists and may result in more significant impacts than anticipated.

We are concerned that treatments near 303(d) listed waters or road ditches that drain into waterways could further degrade water quality due primarily to sediment, herbicide, and temperature loadings. Extensive mechanical (soil disturbance) and chemical (creation of barren ground from invasive plant removal) treatment activities have the potential to increase erosion and sediment delivery to drainages. Applied herbicides could also be discharged to aquatic habitats via surface runoff, wind drift, leaching, or accidental spills. Cumulatively, water quality could also be impacted as a result of cumulative effects from other projects on the SCNF, including, but not limited to, road and trail construction and maintenance activities, livestock grazing along drainages, and recreational activities adjacent to drainages.

#### *Recommendations:*

- *The final EIS should include:*
  - *A summary of the results of site specific analyses of factors influencing the delivery of herbicides to surface water via overland flow in the analysis area and recommended measures to take to reduce adverse effects.*
  - *Numeric standards for which impaired streams are 303(d) listed and data demonstrating that state and tribal water quality standards would be met by this project.*
  - *Discussion on how invasive plants within buffer zones would be treated and measures to take to prevent deterioration of water quality within nearby waterbodies.*
  - *Risk assessment data for adjuvants proposed for use on the SCNF.*
- *The final EIS should identify added precautions that will be used when applying treatments near streams or road ditches that drain in the streams to minimize or avoid drift impacts and sublethal effects to aquatic life. For example, FS should avoid application of Picloram and other herbicides with very high toxicity to fish and movement rate to water sources within annual flood plains with water table close to the surface and high soil permeability.*

- *Because there are fish-bearing rivers and streams, including species that are endangered, threatened, and rare and sensitive (p. 3.156-7), the final EIS should include outcomes of consultations with the National Marine Fisheries Service and recommended measures to reduce risks to fisheries as the proposed project is implemented.*
- *The FS should exclude application of herbicides with no water quality data near waterbodies and designated source water protection areas.*

### **Impacts to Vegetation and Wildlife**

The DEIS discusses the proposed project impacts to vegetation and indicates that invasive plant species on the SCNF mostly invade grasslands, shrub lands and low elevation conifer cover types, especially sites where the soil and native vegetation have been disturbed. It also indicates that grasslands (377,188 acres) and low elevation mixed evergreen shrub (706,560 acres) cover types are particularly vulnerable to invasive plants due to lower annual precipitation, higher degree of human use, and a lack of a forest overstory to inhibit shade intolerant invasive plants (p. 3.43). Thus, they are also more susceptible to herbicide damage, especially seedlings/saplings and forbs. Application of herbicides, such as glyphosate, imazapyr and imazamox, have the potential to damage macrophytic species (wetland vegetation), resulting in reduced root and shoot growth, curling, chlorosis and/or necrosis and plant death (p. 3.65). The extent of that impact in the project area is not clear, however, because wetlands are only mapped for a small portion of the area (p. 3.88).

Of the herbicides used on the SCNF, glyphosate and 2,4-D are most likely to impact evergreen shrubs by killing living plant foliage they are deposited on when applied. The other herbicides also have the potential to kill or damage native or desirable forb species, especially during early invasion when invasive forb plants are intermixed with natives. Most invasive plant species on the SCNF are forbs and, therefore, are typically the most impacted non-target vegetation (p. 3.47). Grassland cover types, which usually host many native forb species, are also more heavily invaded in the project area (p. 3.50). Graminoids are susceptible to herbicide applications, particularly where glyphosate is used, even at low use rates (p. 3.49). Thus, the combined effect of applying herbicides on forbs and graminoids could result in significant impact to this plant community, with some impacts being permanent in case of plant death (p. 3.225).

In particular, aerial and herbicide applications may harm non-target forage and cover species than other methods (p. 3.251). Applications of sulfometuron methyl, for example, could result in injury or mortality of all age classes of shrubs. Deciduous and evergreen shrubs seedling injury or mortality could also result from the application of aminopyralid, chlorsulfuron, metsulfuron methyl, and picloram. Perennial grasses would also be vulnerable to herbicide application, especially those at seedling stage or younger. As the DEIS indicates, the number of acres treated annually will also increase in years in which herbicides would be applied aerially, which would also trigger an increase in the amount of broadcast application acreage, creating a concurrent increase in the adverse effects of herbicide application to non-target vegetation in areas treated aerially (p. 3.69).

Herbicide treatments could also impact wildlife and livestock due primarily to direct spray, accidental spills, drift, and ingestion of contaminated vegetation, prey species, or water. Effects to animals could include death, damage to vital organs, decrease in growth, decrease in reproductive output and condition of offspring, and increased susceptibility to predation. Wildlife in particular, could experience disruption

of dispersal and foraging, which could expose some species to greater predation related to habitat and cover losses. The DEIS indicates that terrestrial and aquatic applications of herbicides are likely to alter vegetation and have secondary effects on animals, including food availability and habitat quality (p. 3.213).

While we appreciate ecological risk assessment data provided, we note that surrogate species e.g., honeybees as a surrogate for other terrestrial invertebrates, were used for analyses of effects on rare, threatened, or endangered, candidate for listing, and sensitive species due to lack of available studies. The assessment also addresses the species using the same toxicity endpoint for other non-special status species, which would not accurately predict outcomes. Additionally, the risk assessment did not include risks associated with incidents e.g., wind erosion that applicants are required to report. For example, the DEIS indicates that none of the acute or chronic exposure scenarios at any application rate of sulfometuron-methyl for mammals, birds, amphibians, or terrestrial invertebrates, resulted in a hazard quotient that exceeded the Level of Concern (p. 3.219), indicating that no incident is also likely to pose any risk to the species due to sulfometuron-methyl application. In 2002, however, use of sulfometuron-methyl to control cheat grass in a burned area of south central Idaho<sup>3</sup> resulted in off-target movement windblown dust and farmers in the area reported a high degree of crop loss that they attributed to this herbicide. Clearly, it is desirable to avoid off-target effects and identify measures to take, should they occur. Because of this, we believe that the ecological risk assessment may not be adequately and fully expressing real risks of the proposed action to populations of at-risk species or provide accurate data on direct, indirect or cumulative impacts on those populations and their habitats.

#### *Recommendations:*

- *The final EIS should identify all wetlands in the project area and include data on acreages, habitat types, values, functions, and predicted impacts from proposed activities.*
- *Herbicide risk assessment should include evaluation of risks from incidents for each herbicide proposed for use. It should also consider use of similar organisms as surrogates or species themselves.*
- *The final EIS should include outcomes of consultations with the US Fish and Wildlife Service and recommended measures to reduce risks to species and protect biota and habitat during implementation of the proposed project.*

#### **Impacts of Climate Change**

The DEIS discusses climate change and effects that would result from the proposed project (p. 3.359-64). We note that the DEIS states that, "it is not currently feasible to quantify indirect effects of individual or even multiple projects on global climate change, therefore determining significant effects on proposed projects or alternatives on global climate change cannot be made." The DEIS also states that, "the action alternatives likely would not impact greenhouse gas emissions." We believe the EIS would be strengthened by including additional information. Therefore, we recommend:

- *Inclusion of data specific to the proposed project and estimates of GHGs (e.g., from vehicular or aerial traffic) in the final EIS.*

---

<sup>3</sup> <http://www.pesticide.org/get-the-facts/pesticide-factsheets/factsheets/sulfometuron>



- *Consideration of approaches for climate impact assessment outlined in the Council on Environmental Quality's recent "Revised Draft Guidance for Greenhouse Gas Emissions and Climate Change Impacts"<sup>4</sup> and include relevant information in the FEIS.*
- *Implementation of practicable mitigation practices for reducing GHGs during the invasive plant treatment period (10-15 years), such as using energy efficient equipment and limiting idling when possible.*

---

<sup>4</sup> <https://www.whitehouse.gov/administration/eop/ceq/initiatives/nepa/ghg-guidance>

**U.S. Environmental Protection Agency Rating System for  
Draft Environmental Impact Statements  
Definitions and Follow-Up Action\***

**Environmental Impact of the Action**

**LO – Lack of Objections**

The U.S. Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

**EC – Environmental Concerns**

EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

**EO – Environmental Objections**

EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

**EU – Environmentally Unsatisfactory**

EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

**Adequacy of the Impact Statement**

**Category 1 – Adequate**

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

**Category 2 – Insufficient Information**

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

**Category 3 – Inadequate**

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

\* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment, February, 1987.